City of Seattle
Office of City Auditor
Susan Cohen, City Auditor

March 21, 2000

Paula Green, Deputy Superintendent
Seattle City Light
City of Seattle
Seattle, Washington 98104-1876

Dear Ms. Green:

Attached is our report Seattle City Light Settlement Quality Meter Data Audit. We appreciate the cooperation we received during the course of this audit from the staff at Seattle City Light.

We obtained comments on the draft report from staff at Seattle City Light. We want to thank Marilynn Semro, James Hansen and Patrick Gallagher for their help during this audit.

There are no findings in the report related to City Light's SQMD process.

If you have any questions regarding this report, please call me at 233-1093 or Scottie Veinot at 233-1094.

Sincerely,

Susan Cohen
City Auditor

Attachment

Background
The California Independent System Operator (ISO) requires each Scheduling Coordinator (SC) to conduct (or engage an independent, qualified entity to conduct) an audit and test the metering facilities of the SC metered entities that it represents and the meter data provided to the SC to ensure compliance with applicable requirements of any relevant Local Regulatory Authority (LRA).

Seattle City Light (SCL) has a unique role in California because it acts as both a Scheduling Coordinator (SC) and an Energy Service Provider (ESP) to 31 meters at 30 facilities. As SC, SCL is responsible for ensuring that the meter data used for billing purposes is of settlement quality. SCL usually supplies the power for these loads from deliveries of interchange or occasionally from inter SC trades. SCL owns no generation facilities in California and uses no pseudo meters. SCL submits settlement quality meter data (SQMD) for load meters only.

In August 1999, SCL asked the Office of City Auditor to perform an audit to meet the compliance requirements of the California Independent System Operator (ISO) Tariff Metering Protocol. This protocol requires SC's to:

> "….at least annually conduct audits and tests of the Metering Facilities of the Scheduling Coordinator (SC) Metered Entity that it represents and the Meter Data provided to the Scheduling Coordinator (SC) in order to ensure compliance with all applicable requirements of any relevant Local Regulatory Authority. Scheduling Coordinator (SC)s shall undertake any other actions that are reasonable and necessary to ensure the accuracy and integrity of the Settlement Quality Meter Data provided by them to the ISO" (Section MP 4.2.1 (a))."

Audit Objectives
The objectives of this audit were to:

- Perform an audit of the process for the flow of meter data from the meter to the SC and the ISO;
- Determine if SCL is creating accurate SQMD;
- Determine if SCL is in compliance with all applicable requirements;
- Review the process used for the SQMD system and document the risks and controls over the Meter Facility, Meter Reading and Settlement Meter Data Processing;
- Perform the audit in accordance with generally accepted government auditing standards;
- Report our conclusions to the Superintendent of SCL; and
- Review and recommend improvements to the SQMD process and provide follow up services as required to aid in the implementation of recommendations.

Audit Scope

The scope of this audit was limited to the following:

- The audit period was April 1, 1998 to June 30, 1999; and,
- The audit required by the California ISO is divided into 3 areas of review: Load, Generation Data, and Pseudo Meters. SCL does not have Generation Data or Pseudo meters; therefore, they were not included in the audit scope.

Audit Methodology

We conducted tests of all the areas where we identified risks during the audit planning phase. Audit testing was conducted on three areas: Meter Data Collection, Meter Data Processing, and Meter Data Validation and Completeness. We conducted tests to determine if controls were in place and operating for each area. We documented the selection of sample data and the results of testing.

We created flow diagrams of the SCL systems that have been developed in-house to support the SCL in its SC role. We conducted interviews with the following SCL officials James Hansen, Executive II, Patrick Gallagher, Technical Meter Electrician and Marilynn Semro, Senior Power Analyst. We obtained information about the California ISO from the Internet sites where the SC requirements are located. We observed the security and access controls over the Seattle City Light California ISO System at its location. We obtained copies of audit reports from some of the meter data management agents (MDMA) and reviewed them to identify control weaknesses. We also obtained and reviewed reconciliation reports produced by Southern California Edison regarding the generation of SQMD.

We performed this audit in accordance with generally accepted government auditing standards. We included tests of controls and other audit procedures we considered necessary.

Conclusion and Opinion

Based on the work performed, in our opinion, Seattle City Light is in compliance with the tariff requirements and the process being used to generate the SQMD is capable of creating SQMD that is accurate and complete. We did note that one of SCL's MDMA's- Pacific Gas and Electric- had not submitted an audit report in time to be used for this report. See the detailed audit results and findings section of this report for a detailed description of the audit results.

Detailed Audit Results And Findings

Meter Data Collection

We performed audit tests to verify that meter reading is performed as scheduled, and that the Validation, Editing and Estimating (VEE) is performed in accordance with Local Regulatory Authority (LRA) standards.

- We determined that SCL routinely compares raw meter data from its MV90 system against the California Meter Exchange Protocol (CMEP) records from the Meter Data Management Agents (MDMA) to ensure they are reasonable. We performed similar comparisons to test several periods; we did not identify any weaknesses in the raw meter reads performed by SCL's MV90 system, including long and short intervals.

- SCL requested that all MDMA's provide evidence that they are in compliance with VEE. We received audit reports from San Diego Gas and Electric and Southern California Edison. Both audit reports listed controls that the MDMA's have in place over their functions. Neither audit included tests to determine if the controls are working as documented; however, this was not a requirement of the ISO. We have not received a report from Pacific Gas and Electric in time to include the results in our current audit.

- Our tests showed that Meter Data Collection is timely and accurate, meters are read per schedule, and customer reads are available and included in the processing system. We determined that data flags are working as expected. This provided assurance that Meter Data Collection is in accordance with standards, and that controls are in place and operating.

Meter Data Processing

We performed tests to determine whether the proper Distribution Loss Factors (DLF) were applied (i.e., correct DLF and correct voltage level for each meter for each hour).

- We tested the system by deleting a DLF record for one voltage level for one Utility Distribution Company (UDC) referenced by one or more of the meters. The system reported that there were not 24 hours of DLF data available for the UDC, and the system did not produce a meter data exchange format (MDEF) record.

- We selected one demand zone and one hour and calculated the SQMD for all the meters in the demand zone by using DLFs and California Meter Exchange Protocol (CMEP) data. We compared that information with the text file output for the MDEF file for that hour and that demand zone. The data matched.

- We verified that each meter's identity record had the correct voltage level.

- We determined that the aggregation of meter data compared to the proper scheduling point was accurate. We verified that the meter identity records have the correct demand zone.

- We observed SCL submit meter data to the California ISO and observed the acknowledgement and acceptance of the MDEF file data by the ISO.

- The Southern California Edison audit included documentation of its quarterly energy consumption reconciliation, which reconciles customer usage data with SQMD data submitted by SCL to the ISO.

Meter Data Validation and Completeness

We conducted tests to determine whether all data was complete and properly included in the records, and that all loads scheduled were being reported in the MDEF file.

- We compared a schedule for a day that had been accepted by the ISO to a MDEF file for the same day, and verified that all four demand zones scheduled were included in the MDEF (or SQMD) file.

- We reviewed the standard query language (SQL) statements and determined that the SQL programs include routines that verify that all meters are selected and correctly verified.

- We reviewed the SQL statements to determine they include SQL routines that verify that all DLF data are present.